

BUT · THE TEAM THAT



BREEDS SUCCESS

BIG 6

PERFORMANCE
GOALS

BRITISH
UNITED
TURKEYS



2nd Edition



B.U.T.

The team that breeds success

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THE OBJECTIVES OF THE PERFORMANCE GOALS.

British United Turkeys Limited (B.U.T.) first began publishing performance goals for its stock in 1965. Since that time, the goals have achieved strong credibility for being realistic data which can be used in several ways as a management tool.

The uses include:-

- a) Business. The data can be used by accountants and business managers in drawing up financial budgets.
- b) Farm Management. Comparisons of actual results against the goals will provide useful information on farm management efficiencies.
- c) Problem solving. The first stage to solving a problem is to describe the problem accurately. A comparison of actual results against the goals will enable the problem areas to be highlighted. This will often be a good indicator of the aspects to be investigated or improved.

The booklet also includes additional technical information which can help provide solutions to problems.

The Basis of the Performance Goals

The Performance goals are an estimate of the results which can be achieved under conditions prevailing in large commercial operations. In very favourable conditions such as are found with very small flock sizes and where there is ample housing, optimum ventilation and feed availability, the results achieved could exceed the goals significantly.

The goals apply to temperate conditions. Results will be depressed in the summers of countries with mediterranean or tropical climates.

Nutrition has a major influence on performance. The basis of the goals presume diets following B.U.T. recommendations fed as crumbs to 4 weeks of age and as good pellets thereafter.

As performance can be affected by various factors existing in particular operations, these goals cannot and should not be regarded as a form of guarantee.

COMMERCIAL STOCK MANAGEMENT

1. House Preparation Check List:

1. Thoroughly power wash/steam to remove all traces of organic matter.
2. Disinfect, ensuring correct concentration and total wetting.





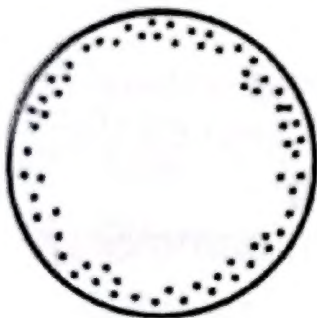
3. Fumigate or fog.
4. Check the operation of all equipment.
5. Add litter (8 cm deep) which should be a dry absorbent material free from dust, moulds, preservatives and pesticides.
6. Erect surrounds - 4.5 m (15') diameter per 300 - 350 poults.
7. Equipment per surround:
 - 1 Brooder (4.7 K.W.)
 - 3 Automatic drinkers
 - 4 Font type drinkers
 - 4 Tube feeders
 - 4 Feed trays
8. Re-fumigate or fog.
9. Thoroughly ventilate.
- 10 . Light brooders, adjust height/thermostat to obtain a spot heat of 38°C. (100°F.) and an ambient temperature of 21 - 25°C. (70 - 77°F.). Relative humidity should be 65 - 70%.
11. Feed and water should not be added too soon before placement as feed quality deteriorates in high temperatures and a high water temperature can restrict intake.
12. Ensure surround litter is compacted and level .

2. Poult Placement Check List

1. Poults should be placed quickly and quietly under the brooders.
2. After an initial check, the poults should be left for about half an hour.
3. Too much activity or noise in the house will encourage crowding, especially where wire surrounds are used.
4. The ideal brooding system is a combination of space heating, spot heating and ventilation. The poults will act as the most accurate thermometer in determining their comfort.

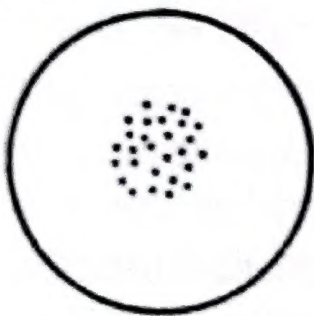


(a) Temperature too high.



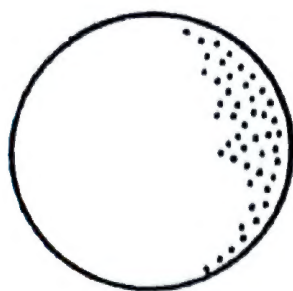
The poults move well away from the brooder, congregating around the circumference of the surround. In extreme cases they pant and their wings droop.

(b) Temperature too low.



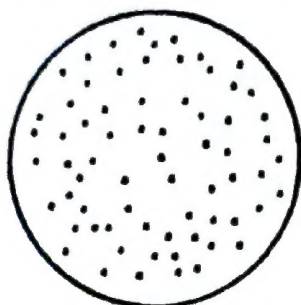
The poults cry and crowd together, jostling for position under the brooder.

(c) Drafts, noise, activity.



The poults crowd together against one part of the surround.

(d) Correct temperature.



The poults are evenly distributed over the entire surround area.

3. Lighting Programme

Commercial turkeys can be grown successfully under a number of different lighting programmes. The following is most commonly adopted:

Day old	-	36 hours	Continuous light, 100 Lux with 1 hour conditioning darkness after 24 hours.
36 hours	-	Kill	14 hours light with reduced intensity to control pecking. It is advantageous to maintain a very low light level during the dark period to prevent panic problems.

4. Stocking Density

	Males	Females
Day old - 8 weeks	8	10 poult/m ²
8 weeks - kill	A maximum liveweight of 38 kg/m ² depending on environment.	



5. Beak Trimming

If not previously done by the hatchery, trimming should be carried out at 6 - 7 days, the day prior to removing the surrounds. Only one third of the top beak between the tip and the nostrils should be removed. When trimming is not practised pecking can be controlled by the use of low light intensities.

6. Feeder Space

40 birds / 1 tube feeder or 120 cm linear trough.

7 . Drinker Space

100 birds / 1 bell type drinker or 100 cm linear trough.

8. Ventilation

For completely light baffled houses, the ventilation system should be capable of moving air at a maximum of 7.5m³/hr/kg liveweight at maximum stocking density. The minimum ventilation should be controlled to ensure that pollutants such as dust, carbon dioxide, ammonia, excess water vapour and other pollutants are removed, as well as providing adequate oxygen requirements.



Target maximum concentrations for pollutants are:

Carbon Dioxide 0.4%

Ammonia 20ppm

Relative Humidity 70%

9. Water Consumption

Water consumption is directly correlated to several environmental factors and is often doubled in temperatures above 36°C. Feed and health also significantly affect consumption, which monitored on a daily basis, can provide an early warning of impending problems. Turkeys normally consume 2.2 times the amount of water (litres) as they do feed (kg).

PARENT STOCK MANAGEMENT

Sections 1, 2, 6, 7 and 8 in Commercial Stock Management also apply to Parent Stock Management.

1. Lighting Programme

Parent Male:

Age	Hours/Day	Minimum Intensity (Lux)
Day old- 36 hours	Continuous with 1 hour conditioning darkness after 24 hrs.	100
36 hours - 14 weeks	14	50
14 weeks - 25 weeks	10 or 14	25
25 weeks - end of production	14	25

Parent Female:



Age	Hours/Day	Minimum Intensity (Lux)
Day old - 36 hours	Continuous with 1 hour conditioning darkness after 24 hours.	100
36 hours - 18 weeks	14	60
18 weeks - 29.5 weeks	7	60
29.5 weeks - end of lay	14	100

Never decrease the light period or intensity during production and always ensure that the intensity during lay is greater than that during the pre-lay period.

Stocking Density

	Parent Females	Parent Males
Day old - 8 weeks	7.0	5.0 birds m ²
8 weeks - 14 weeks	3.5	2.0
14 weeks - 29 weeks	3.0	1.5
29 weeks -	1.5	1.0 BIG 6
end of production	2.0	1.0 BUT 8

Provision of adequate space allows parent stock to develop properly, promoting uniformity and optimum production.



3. Beak Trimming

This should initially be carried out at 6 - 7 days the day before removing the surrounds.

Only one third of the top beak between the tip and the nostrils should be removed.

The second trimming of the females should take place at around 14 weeks.

Males should not be trimmed between the ages of 9 and 18 weeks as it can lead to staphylococcal infection. After this period the top beak can be trimmed.

Further trimming of the female's top beak can be made at lighting, if necessary.

4. Selection

The selection of females normally takes place at 14 weeks when about 85% of the day old intake is retained. The aim is to produce a uniform flock free of abnormalities.

The selection of males is normally carried out twice. The first at 14 weeks when around 50% of the day old placement is retained. The second is carried out at 24 weeks when the best 90% are retained. Selection criteria include weight, conformation, leg strength and freedom from abnormalities.

A male: female ratio of 1 : 14 or 7% is usually employed during production. This ratio can be reduced by the use of semen diluent.



5. Production

(a) Males

To accustom males to handling and to check on semen quality they should be pre-milked at least twice before the first insemination. Semen should be pearly-white and free from urates, faeces or blood. Males which continually give inferior quality semen should be culled. Twice weekly milking will help to maintain semen quality during the production period.

Housing stags in groups of up to 20 at the correct density reduces fighting, mortality and aids semen production.

(b) Females

Single-tier nest boxes are preferred by today's heavier strains. A maximum ratio of 1 nest : 5 females encourages nest box usage and management is made easier when this ratio is reduced.

Nest boxes should be fitted with semi-traps which can be fastened open from one week before production begins. They should remain open during the first week of production allowing free access, to help reduce the incidence of floor laying.



(d) Artificial Insemination:

The timing of the first insemination is important in helping ensure a high initial fertility. This normally takes place 14 - 16 days after lighting which should coincide with the day on which the first egg is laid. If insemination is carried out before this time then there is an increased risk of damage to the oviduct which could result in infection and loss of both production and fertility. The second insemination should be carried out 2 days after the first and the third being completed by the end of the first week's production. Weekly inseminations should then be made throughout the production period. A double insemination can be beneficial to help maintain a high fertility when carried out around the mid-lay period or at any time that fertility begins to fall.

Quiet and confident handling of both males and females during insemination is essential for good results. An initial low fertility is extremely difficult to increase whereas an initial high fertility is more easily maintained throughout production.

The semen dosage is generally considered to be 0.025 ml or 200 million spermatozoa to achieve maximum fertility. Semen should be used within 30 minutes of collection though with the correct use of diluent, this time can be extended.

CONVERSION FACTORS

To Convert	Multiply by	S.I. Symbols
Inches to centimetres	2.540	in-cm
Centimetres to inches	0.3937	cm-in
Feet to metres	0.3048	ft-m
Metres to feet	3.281	m-ft
Yards to metres	0.9144	yd-m
Metres to yards	1.094	m-yd
Square feet to square metres	0.0929	ft ² -m ²
Square metres to square feet	10.760	m ² -ft ²
Square yards to square metres	0.8361	yd ² -m ²
Square metres to square yards	1.196	m ² -yd ²
Cubic feet to cubic metres	0.0283	ft ³ -m ³
Cubic metres to cubic feet	35.310	m ³ -ft ³
Cubic feet per minute to cubic metres per hour	Cu.ft/min +35.3 x 60	ft ³ /min-m ³ /h
Cubic metres per hour to cubic feet per minute	Cu.m/hr +60 x 35.3	m ³ /h-ft ³ /min
British thermal units to kilojoules	1.054	Btu-kJ
Kilojoules to British thermal units9488	kJ-Btu
Fahrenheit to Centigrade	Temp °F - 32 x .555	°F - °C
Centigrade to Fahrenheit	Temp °C x 1.8 + 32	°C - °F
Ounces to grams	28.350	oz-g
Grams to ounces	0.03527	g-oz
Pounds to grams	453.6	lb-g
Grams to pounds	0.002205	g-lb
Pounds to kilograms	0.4536	lb-kg
Kilograms to pounds	2.205	kg-lb
Tons (UK) to kilograms	1016.05	ton-kg
Kilograms to tons (UK)	0.0009842	kg-ton
Tons (US) to kilograms	907.1850	ton(US)-kg
Kilograms to tons (US)	0.0011023	kg-ton(US)
Fluid ounces (UK) to cubic centimetres	28.4130	fl oz (UK)-cm ³
Cubic centimetres to fluid ounces (UK)	0.0352	cm ³ -fl oz (UK)
Fluid ounces (US) to cubic centimetres	29.5737	fl oz (US)-cm ³
Cubic centimetres to fluid ounces (US)	0.03381	cm ³ -fl oz (US)
Gallons (UK) to litres	4.546	gal (UK)-l
Litres to gallons (UK)	0.220	l-gal (UK)
Gallons (US) to litres	3.785	gal (US)-l
Litres to gallons (US)	0.2642	l-gal (US)
10.76 lux = 1 Foot Candle or 1 lumen		



Parent Male					
Age (weeks)	Energy In feed (MJ ME/kg)	Body Weight		Feed Intake Cumulative	
		(kg)	(lbs)	(kg)	(lbs)
0		0.05	0.11		
1	11.8	0.17	0.38	0.16	0.35
2	11.8	0.38	0.83	0.46	1.00
3	11.8	0.73	1.60	0.98	2.15
4	11.8	1.21	2.66	1.76	3.87
5	12.0	1.87	4.10	2.86	6.30
6	12.0	2.67	5.86	4.28	9.42
7	12.0	3.56	7.82	6.00	13.20
8	12.0	4.54	9.99	8.01	17.62
9	12.1	5.63	12.38	10.31	22.69
10	12.1	6.78	14.91	12.87	28.31
11	12.1	8.00	17.59	15.70	34.53
12	12.1	9.28	20.41	18.78	41.32
13	12.1	10.59	23.29	22.09	48.59
14	12.1	11.93	26.25	25.62	56.36
15	12.1	13.28	29.22	29.41	64.69
16	12.1	14.65	32.22	33.47	73.62
17	12.1	15.99	35.18	37.77	83.10
18	12.1	17.32	38.11	43.36	93.19
19	12.1	18.62	40.97	47.22	103.87
20	12.1	19.87	43.72	53.31	115.09
21	12.1	21.06	46.34	57.62	126.76
22	12.1	22.19	48.82	63.12	138.86
23	12.1	23.24	51.12	68.77	151.28
24	12.1	24.18	53.20	74.51	163.92
25	12.1	25.02	55.04	80.25	176.56
26	12.1	25.74	56.62	86.00	189.21
27	12.1	26.33	57.93	91.73	201.81
28	12.1	26.78	58.92	97.37	214.21
	12.1	27.07	59.55	102.84	226.25

32.36

71.19

Intake:
roduction

5.85kg/male/week (12.9lbs)
in semen production

Big 6 Breeding Stock

Parent Female				
Body Weight		Feed Intake Cumulative		Age
(kg)	(lbs)	(kg)	(lbs)	(days)
0.05				0
0.16	0.36	0.14	0.32	7
0.30	0.67	0.36	0.80	14
0.55	1.20	0.75	1.65	21
0.87	1.91	1.31	2.89	28
1.25	2.76	2.04	4.49	35
1.70	3.73	2.95	6.50	42
2.18	4.80	4.04	8.89	49
2.70	5.93	5.32	11.70	56
3.23	7.11	6.78	14.91	63
3.78	8.31	8.40	18.49	70
4.33	9.53	10.20	22.45	77
4.89	10.75	12.16	26.75	84
5.44	11.98	14.26	31.37	91
6.00	13.20	16.50	36.29	98
6.54	14.40	18.85	41.47	105
7.08	15.58	21.31	46.88	112
7.60	16.71	23.87	52.51	119
8.10	17.82	26.51	58.31	126
8.59	18.89	29.20	64.24	133
9.05	19.91	31.94	70.27	140
9.48	20.86	34.71	76.36	147
9.89	21.75	37.48	82.47	154
10.26	22.58	40.26	88.58	161
10.59	23.31	43.01	94.62	168
10.89	23.95	45.72	100.57	175
11.13	24.49	48.35	106.36	182
11.31	24.89	50.87	111.91	189
11.42	25.13	53.24	117.12	196
11.45	25.20	55.42	121.93	203
11.13	24.49	End of lay		

2.17kg/female/week (4.8lbs)

TABLE B2 Target live weights for Big 6

Age (weeks)	Full Fed Conventional		Full Fed Male Holding	
	(kg)	(lbs)	(kg)	(lbs)
16	14.7	32.2	14.7	32.2
17	16.0	35.2	16.0	35.2
18	17.3	38.1	16.8	36.9
19	18.6	41.0	17.6	38.7
20	19.9	43.7	18.4	40.5
21	21.1	46.3	19.2	42.2
22	22.2	48.8	20.0	44.0
23	23.2	51.1	20.8	45.7
24	24.2	53.2	21.6	47.4
25	25.0	55.0	22.3	49.0
26	25.7	56.6	22.9	50.4
27	26.3	57.9	23.4	51.4
28	26.8	58.9	23.8	52.3
29	27.1	59.6	24.2	53.3
30	27.3	60.0	24.6	54.0
31	27.5	60.4	24.9	54.7
32	27.7	60.9	25.2	55.4
33	27.9	61.3	25.5	56.1
34	28.1	61.8	25.8	56.8
36	28.5	62.6	26.4	58.1
38	28.9	63.5	27.0	59.4
40	29.2	64.3	27.6	60.7
42	29.6	65.2	28.2	62.0
44	30.0	66.0	28.8	63.3
46	30.4	66.9	29.3	64.6
48	30.8	67.8	29.9	65.9
50	31.2	68.6	30.5	67.1
52	31.6	69.5	31.1	68.4
54	32.0	70.3	31.7	69.7
56	32.4	71.2	32.3	71.0

1. Feed intakes to achieve the quantity restricted target weights will vary according to many factors. Feed intake should be adjusted

Parent Males

Quantity Restricted		Gain week		Age (days)
(kg)	(lbs)	(g)	(lbs)	
14.7	32.2			112
15.1	33.3	470	1.03	119
15.6	34.2	440	0.97	126
16.0	35.2	440	0.97	133
16.4	36.2	440	0.97	140
16.9	37.1	440	0.97	147
17.3	38.1	440	0.97	154
17.8	39.1	440	0.97	161
18.3	40.2	510	1.12	168
18.9	41.5	600	1.32	175
19.6	43.0	680	1.50	182
20.3	44.6	740	1.63	189
21.0	46.3	750	1.65	196
21.8	47.9	750	1.65	203
22.5	49.6	740	1.63	210
23.2	51.0	650	1.43	217
23.8	52.3	580	1.28	224
24.3	53.4	500	1.10	231
24.7	54.3	440	0.97	238
25.5	56.0	380	0.83	252
26.1	57.5	330	0.73	266
26.7	58.7	280	0.61	280
27.2	59.8	240	0.53	294
27.6	60.6	200	0.44	308
28.0	61.5	200	0.44	322
28.4	62.4	200	0.44	336
28.8	63.3	200	0.44	350
29.2	64.2	200	0.44	364
29.6	65.0	200	0.44	378
30.0	65.9	200	0.44	392

2. If 16 week weight exceeds that shown, adjust target weights by the difference between the actual and target 16 week weight.

TABLE B3 BIG 6 Parent Female Egg

EGG PRODUCTION				*FERTILITY	
Weeks in Lay	% Hen housed prodn.	Settable eggs per hen per week	Settable eggs per hen to date	% True fert.	% Dead germs
1	39.7	2.78	2.78	92.0	4.2
2	64.7	4.53	7.31	94.2	4.1
3	69.9	4.89	12.20	95.8	4.1
4	69.4	4.86	17.06	96.1	4.1
5	68.8	4.82	21.88	96.2	3.9
6	68.4	4.79	26.67	96.1	3.8
7	68.8	4.82	31.49	96.0	3.7
8	69.0	4.83	36.32	95.9	3.7
9	68.1	4.77	41.09	95.5	3.7
10	67.2	4.70	45.79	95.1	3.7
11	65.9	4.61	50.40	94.4	3.7
12	64.6	4.52	54.92	94.1	3.8
13	63.3	4.43	59.35	93.5	3.8
14	62.0	4.34	63.69	93.1	3.9
15	60.7	4.25	67.94	92.5	4.0
16	59.3	4.15	72.09	92.0	4.1
17	58.0	4.06	76.15	91.6	4.3
18	56.5	3.95	80.10	91.2	4.5
19	54.9	3.84	83.94	90.7	4.6
20	53.2	3.73	87.67	90.2	4.8
21	51.4	3.60	91.27	89.8	5.0
22	49.6	3.47	94.74	89.0	5.2
23	47.8	3.35	98.09	88.4	5.4
24	46.0	3.22	101.31	87.3	5.7

*Fertility and hatchability performance goals are based on eggs stored for 4 days.

Production, Fertility and Hatchability

	*HATCHABILITY				
% Live germs	% Hatch of live germs	% Hatch of eggs set	Number of poult per hen week	Total poult per hen to date	Weeks of age
87.8	85.0	74.6	2.07	2.07	33
90.1	87.7	79.0	3.58	5.65	34
91.7	89.2	81.8	4.00	9.65	35
92.0	89.9	82.7	4.02	13.67	36
92.3	90.0	83.1	4.00	17.67	37
92.3	89.5	82.6	3.96	21.63	38
92.3	89.0	82.2	3.96	25.59	39
92.2	88.4	81.5	3.94	29.53	40
91.8	87.8	80.6	3.84	33.37	41
91.4	87.3	79.8	3.75	37.12	42
90.7	86.8	78.7	3.63	40.75	43
90.3	86.2	77.8	3.52	44.27	44
89.7	85.7	76.8	3.40	47.67	45
89.2	85.2	76.0	3.30	50.97	46
88.5	84.7	75.0	3.19	54.16	47
87.9	84.1	73.9	3.07	57.23	48
87.3	83.6	73.0	2.96	60.19	49
86.7	83.1	72.1	2.85	63.04	50
86.1	82.5	71.0	2.73	65.77	51
85.4	82.0	70.0	2.61	68.38	52
84.8	81.5	69.1	2.49	70.87	53
83.8	81.0	67.9	2.36	73.23	54
83.0	80.5	66.8	2.24	75.47	55
81.6	80.0	65.2	2.10	77.57	56

To estimate hatchability for stored eggs, refer to Table B5.

TABLE B4 Parent Stock Feed Consumption

The following Table shows the amount of feed required for the number of males and females needed to bring 1000 females into lay

Big 6 Parent Male

Age (days)	Feed use per live bird (kg)	Average number of birds in period	Total feed use in period (kg)	Selection rejects
0 to 28	1.76	168	296	
28 to 56	6.25	165	1031	
56 to 84	10.77	163	1756	
84 to 112	14.69	160	2350	70 at 16 wks
112 to 168	41.04	88	3612	10 at 24 wks
168 to 203	28.33	76	2153	
	<hr/> 102.84	75	<hr/> 11198	

*Feed use per male alive at 203 days
Feed use in semen production

149.31kg
5.85kg per male
per week

Big 6 Parent Female

Age (days)	Feed use per live bird (kg)	Average number of birds in period	Total feed use in period (kg)	Selection rejects
0 to 28	1.31	1163	1524	
28 to 56	4.01	1143	4583	
56 to 84	6.84	1126	7702	
84 to 112	9.15	1115	10202	90 at 16 wks
112 to 203	34.11	1010	34451	
	<hr/> 55.42	1000	<hr/> 58462	

*Feed use per female alive at 203 days
Feed use in lay

58.46kg
2.17kg per female
per week

*Total amount of feed used in rearing divided by the number of birds alive at 203 days

TABLE B5 Egg Storage correction Factors for Hatchability of the BIG 6 egg

The hatchability data in Table B3 are based on eggs stored for 4 days in total.

To estimate the hatchability of stored eggs, multiply the normal hatchability by the appropriate correction factor.

Days Stored	Correction Factor
-------------	-------------------

1	0.950
2	1.000
3	1.000
4	1.000
5	0.996
6	0.992
7	0.985
8	0.978
9	0.968
10	0.956
11	0.944
12	0.929
13	0.911
14	0.893
15	0.873
16	0.852
17	0.827
18	0.803
19	0.775
20	0.746

EXAMPLE

Normal hatch of eggs set at 10 weeks in lay is:	79.8%
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If eggs are stored for 10 days the estimated hatch of eggs set is			
0.956	x	79.8%	= 76.3%

TABLE B6 BIG 6 Commercial Males Weight,

Age (weeks)	Liveweight (Kg)	Liveweight (lbs)	Liveability (%)	Feed A Weekly Feed Intake (kg)	Feed A Weekly Feed Intake (lbs)
			100.00		
1	0.16	0.35	98.50	0.15	0.33
2	0.38	0.84	98.20	0.31	0.69
3	0.72	1.59	98.00	0.52	1.14
4	1.19	2.63	97.79	0.77	1.70
5	1.81	3.98	97.59	1.01	2.22
6	2.55	5.63	97.39	1.30	2.87
7	3.41	7.51	97.19	1.59	3.50
8	4.35	9.59	96.98	1.86	4.11
9	5.36	11.81	96.78	2.04	4.50
10	6.42	14.15	96.58	2.26	4.98
11	7.52	16.56	96.37	2.47	5.44
12	8.64	19.03	96.14	2.66	5.86
13	9.77	21.52	95.87	2.79	6.14
14	10.90	24.01	95.58	2.95	6.50
15	12.02	26.48	95.28	3.12	6.87
16	13.12	28.92	94.97	3.29	7.25
17	14.22	31.33	94.63	3.36	7.41
18	15.29	33.71	94.21	3.53	7.79
19	16.36	36.05	93.67	3.71	8.17
20	17.40	38.36	93.00	3.89	8.58
21	18.44	40.63	92.22	4.09	9.01
22	19.45	42.88	91.35	4.28	9.43
23	20.46	45.08	90.41	4.47	9.85
24	21.44	47.26	89.43	4.65	10.25

1. Under the best conditions 10% better liveweights than above could be achieved.
2. The feed programme used will have a big influence on both liveweights and feed conversion.

Feed Intake and Feed Conversion

Feed A Cumulative F.C.R	Feed B Weekly Feed Intake (kg)	Feed B Weekly Feed Intake (lbs)	Feed B Cumulative F.C.R	Age (days)
0.95	0.15	0.34	0.99	7
1.23	0.33	0.72	1.28	14
1.37	0.54	1.19	1.42	21
1.47	0.80	1.76	1.53	28
1.53	1.08	2.39	1.62	35
1.60	1.40	3.09	1.70	42
1.67	1.71	3.77	1.78	49
1.74	2.01	4.43	1.86	56
1.79	2.25	4.96	1.93	63
1.85	2.51	5.54	2.01	70
1.92	2.75	6.05	2.08	77
1.98	2.96	6.52	2.16	84
2.04	3.15	6.94	2.24	91
2.10	3.33	7.33	2.32	98
2.17	3.52	7.76	2.40	105
2.25	3.72	8.19	2.49	112
2.32	3.85	8.49	2.58	119
2.40	4.05	8.92	2.67	126
2.48	4.25	9.36	2.77	133
2.57	4.46	9.83	2.88	140
2.67	4.60	10.15	2.99	147
2.77	4.82	10.63	3.11	154
2.88	5.04	11.10	3.23	161
2.99	5.24	11.56	3.35	168

3. Weekly feed intake is per live bird. Cumulative F.C.R. includes an allowance for feed consumed by dead birds.
4. Details of the nutrient specifications for feed programmes A and B can be found in Table C3.

TABLE B7 BIG 6 Commercial Females Weight

Age (weeks)	Liveweight (Kg)	Liveweight (lbs)	Liveability (%)	Feed A Weekly Feed Intake (kg)	Feed A Weekly Feed Intake (lbs)
			100.00		
1	0.15	0.34	98.50	0.15	0.32
2	0.35	0.77	98.20	0.28	0.62
3	0.64	1.40	98.00	0.45	0.99
4	1.02	2.25	97.80	0.65	1.44
5	1.51	3.32	97.62	0.84	1.86
6	2.09	4.62	97.46	1.09	2.39
7	2.77	6.10	97.30	1.33	2.92
8	3.51	7.73	97.16	1.56	3.43
9	4.28	9.43	97.01	1.69	3.72
10	5.07	11.17	96.86	1.85	4.08
11	5.86	12.91	96.71	2.01	4.42
12	6.64	14.63	96.57	2.16	4.75
13	7.40	16.32	96.42	2.26	4.98
14	8.15	17.96	96.27	2.38	5.24
15	8.87	19.55	96.12	2.49	5.48
16	9.56	21.08	95.95	2.58	5.69
17	10.22	22.53	95.76	2.59	5.72
18	10.85	23.91	95.56	2.67	5.88
19	11.43	25.19	95.36	2.74	6.04
20	11.97	26.39	95.16	2.81	6.18

1. Under the best conditions 10% better liveweights than above could be achieved.
2. The feed programme used will have a big influence on both liveweights and feed conversion.

Feed Intake and Feed Conversion

Feed A Cumulative F.C.R	Feed B Weekly Feed Intake (kg)	Feed B Weekly Feed Intake (lbs)	Feed B Cumulative F.C.R	Age (days)
0.94	0.15	0.33	0.98	7
1.23	0.30	0.65	1.28	14
1.38	0.47	1.04	1.44	21
1.51	0.68	1.51	1.57	28
1.58	0.91	2.01	1.67	35
1.66	1.17	2.58	1.77	42
1.74	1.44	3.17	1.86	49
1.82	1.69	3.71	1.95	56
1.89	1.88	4.13	2.04	63
1.96	2.07	4.56	2.13	70
2.04	2.25	4.95	2.23	77
2.13	2.41	5.32	2.34	84
2.22	2.57	5.66	2.44	91
2.31	2.70	5.96	2.56	98
2.40	2.83	6.23	2.67	105
2.50	2.94	6.48	2.79	112
2.60	2.99	6.59	2.91	119
2.70	3.08	6.78	3.03	126
2.81	3.16	6.97	3.16	133
2.92	3.24	7.14	3.29	140

- Weekly feed intake is per live bird. Cumulative F.C.R. includes an allowance for feed consumed by dead birds.
- Details of the nutrient specifications for feed programmes A and B can be found in Table C3.

TABLE B8 BIG 6 Commercial Stock Weight and Processing

Age (weeks)	Live-weight (kg)	Eviscerated Weight (kg)	Giblets *1	Evisceration Loss
COMMERCIAL MALES				
12	8.6	6.3	7.9	27.1
13	9.8	7.2	7.5	26.3
14	10.9	8.1	7.1	25.9
15	12.0	9.0	6.8	25.0
16	13.1	9.9	6.5	24.4
17	14.2	10.8	6.3	24.0
18	15.3	11.7	6.0	23.4
19	16.4	12.6	5.8	23.1
20	17.4	13.4	5.7	23.0
21	18.4	14.3	5.5	22.7
22	19.5	15.1	5.4	22.5
23	20.5	15.9	5.3	22.3
24	21.4	16.7	5.2	22.1
COMMERCIAL FEMALES				
12	6.6	4.8	7.2	27.3
13	7.4	5.4	6.9	26.8
14	8.2	6.0	6.5	26.3
15	8.9	6.6	6.2	25.7
16	9.6	7.2	6.0	25.1
17	10.2	7.7	5.7	24.5
18	10.9	8.3	5.5	23.9
19	11.4	8.8	5.3	23.2
20	12.0	9.3	5.1	22.4

N.B. *1 Neck, Liver, Heart and Gizzard

*2 Excluding carcass meat trimmings

and Percentage Composition after Killing

PERCENT OF LIVEWEIGHT			
Total Meat *2	Total Skin	Total Bone *3	Age (days)
47.1	4.7	21.2	84
48.0	5.1	20.6	91
48.5	5.5	20.2	98
49.0	6.0	20.1	105
49.4	6.3	19.9	112
49.5	6.9	19.7	119
49.9	7.2	19.5	126
49.9	7.6	19.4	133
50.0	8.1	19.0	140
50.1	8.5	18.6	147
50.3	8.9	18.3	154
50.5	9.2	18.0	161
50.5	9.6	17.8	168
47.6	5.7	19.5	84
48.3	6.1	18.8	91
48.9	6.5	18.3	98
49.4	7.0	17.9	105
49.8	7.5	17.6	112
50.0	8.1	17.4	119
50.2	8.6	17.4	126
50.3	9.1	17.4	133
50.5	9.8	17.4	140

*3 Including carcass meat trimmings

4 These data do not include any processing water uptake.

TABLE B9 BIG 6 Commercial Stock Carcass

Age (days)	Breast Meat	Breast Skin	Total Breast	Thigh Meat	Thigh Skin	Thigh Bone	Total Thigh
COMMERCIAL MALES							
84	23.0	2.3	25.3	11.6	0.5	0.9	13.0
91	23.9	2.6	26.5	11.7	0.7	0.9	13.3
98	24.4	2.9	27.3	11.7	0.7	1.0	13.4
105	24.9	3.3	28.2	11.7	0.8	1.1	13.7
112	25.4	3.6	29.0	11.8	0.9	1.2	13.9
119	25.8	3.9	29.8	11.7	1.1	1.2	14.0
126	26.4	4.2	30.6	11.7	1.2	1.3	14.1
133	26.8	4.6	31.3	11.5	1.2	1.4	14.1
140	27.2	4.9	32.1	11.5	1.3	1.5	14.2
147	27.6	5.3	32.9	11.4	1.3	1.5	14.2
154	27.9	5.6	33.6	11.4	1.4	1.5	14.3
161	28.2	6.0	34.2	11.4	1.3	1.5	14.2
168	28.4	6.4	34.8	11.4	1.4	1.4	14.2
COMMERCIAL FEMALES							
84	24.8	3.0	27.8	11.7	0.7	0.8	13.2
91	25.2	3.4	28.6	11.9	0.7	0.9	13.5
98	25.5	3.8	29.3	12.1	0.8	0.9	13.8
105	25.9	4.2	30.1	12.2	0.9	1.0	14.1
112	26.2	4.6	30.8	12.3	1.0	1.0	14.3
119	26.6	5.0	31.6	12.3	1.1	1.1	14.5
126	26.9	5.4	32.3	12.2	1.2	1.2	14.6
133	27.2	5.8	33.0	12.1	1.3	1.3	14.7
140	27.4	6.3	33.7	12.0	1.4	1.3	14.8

N.B. 1. Thigh is the femur of the leg with meat and skin cut at the pelvic and tibial articulations

2. Drum is the tibia bone with attendant meat and skin cut at the femoral and metatarsal articulations.

Composition as a Percentage of Liveweight

Drum Meat	Drum Skin	Drum Bone	Total Drum	Wing Meat	Wing Skin	Wing Bone	Total Wing
8.6	0.6	2.0	11.2	3.9	1.3	5.0	10.2
8.3	0.7	2.1	11.1	4.1	1.2	4.7	10.1
8.1	0.7	2.1	11.0	4.2	1.2	4.4	9.8
8.0	0.7	2.2	10.9	4.3	1.1	4.1	9.5
7.8	0.7	2.2	10.8	4.4	1.1	3.8	9.3
7.6	0.8	2.2	10.6	4.3	1.1	3.7	9.1
7.5	0.8	2.2	10.5	4.2	1.1	3.6	8.9
7.4	0.8	2.1	10.3	4.2	1.1	3.4	8.6
7.2	0.8	2.0	10.1	4.1	1.1	3.2	8.3
7.1	0.9	1.9	10.0	4.0	1.0	3.0	8.0
7.1	0.9	1.9	9.8	3.9	1.0	2.9	7.8
7.2	0.9	1.8	9.9	3.7	1.0	2.7	7.5
7.1	0.9	1.7	9.7	3.6	1.0	2.6	7.2
7.3	0.7	1.6	9.6	3.8	1.3	4.3	9.4
7.3	0.7	1.6	9.6	4.0	1.3	3.9	9.2
7.2	0.7	1.6	9.5	4.1	1.2	3.6	9.0
7.1	0.7	1.6	9.4	4.2	1.2	3.3	8.8
7.0	0.7	1.7	9.4	4.3	1.2	3.1	8.6
7.0	0.8	1.7	9.4	4.3	1.2	2.9	8.4
6.9	0.8	1.7	9.4	4.2	1.2	2.8	8.2
6.9	0.8	1.7	9.3	4.2	1.2	2.7	8.1
6.9	0.8	1.7	9.3	4.2	1.2	2.7	8.1

3. No account has been taken of carcass meat trimmings as these will vary greatly according to the skill of the operator and the equipment available.

4. Variation in the yield of different parts will occur due to different cutting techniques.

Feeding Programmes Key Points

Before 4 weeks of age use a good quality crumb or a small diameter (<2mm) pellet cut short. Avoid mash. After 4 weeks, all feed should be pelleted with a 3.2mm diameter pellet satisfactory for all ages. Avoid dusty pellets and mash.

Breeding stock

Male and female breeding stock should be regularly sample weighed to check that growth is progressing according to target.

Males should be fed to achieve target body weights for age before the first selection which usually takes place between 14 and 16 weeks (see Table B1).

After selection, males can be fed *ad libitum* using a female pre-breeder diet until 17 weeks, or later if the males are below target body weight. A low protein male holding diet can then be introduced to restrict subsequent growth rate.

Alternatively, males can be fed quantities of feed after 16 weeks to control growth rate according to a target growth curve (see Table B2).

Females should be reared according to the body weight targets (see Tables B1 and C1). Attention should be given to factors that may increase body weight variation in a flock, particularly during the latter part of the rearing period. A pre-breeder diet should be introduced around 14 weeks of age and is used until the birds move to the breeder farm. During lay, pay attention to amino acid and calcium intake, particularly around peak production. If feed intake is depressed by temperature or pellet quality, increase the nutrient : energy ratio. This is normally done on a seasonal basis as shown in Table C2.

Commercial stock

Aim to achieve target growth rates particularly in the first 6 weeks of life. Growth lost early in life can be difficult to recover at older ages under commercial conditions. Attention to amino acid intake is important at all ages. Do not widen the amino acid : energy ratio too quickly as birds get older. Insufficient amino acid intake, particularly at older ages, can adversely affect both body weight and breast meat yield. Ensure that management factors do not adversely affect feed intake. This includes feeder and drinker availability, spacing and adjustment particularly when stocking density is high. Whenever feed intake is depressed, be prepared to increase amino acid : energy ratios to maintain amino acid intake.

Attention should also be paid to the quality of dietary protein. The inclusion of fishmeal in the diets for young turkeys will help improve amino acid balance and reduce the risks from over reliance on soya. The use of ingredients with protein of poor digestibility should be restricted. Excess or undigested protein will be excreted causing an increased litter ammonia concentration. This may increase the incidence of breast condemnations or cause an environmental nuisance.

*The nutritional recommendations provided in the following tables have been revised according to:

- the latest results from trials conducted as part of BUT's ongoing nutrition research programme
- published scientific information
- current management practices on BUT farms
- the latest revision of the performance goals

The optimum feed programme for any stock will depend on many management, environmental and economic conditions that may differ significantly from those under which the nutritional recommendations were tested. The nutritional recommendations are therefore intended for use as a guide only and should not be considered a guarantee with respect to body weight or growth targets.

TABLE C1 Nutrient Recommendations for Parent Stock in Rearing

Diet		STARTER	GROWER 1	GROWER 2	REARER
Age (d)		0-28	29-56	57-84	85-112
Age (week)		0-4	4-8	8-12	12-16
Nutrient					
Metabolizable	(MJ/kg)	11.8	12.0	12.1	12.1
Energy	(kcal/kg)	2820	2860	2900	2900
	(kcal/lb)	1282	1300	1318	1318
Crude Protein	(%)	26-28.5	23-25	18-20.5	17-18.5
Lysine	(%)	1.57	1.21	1.00	0.86
Methionine	(%)	0.60	0.48	0.41	0.38
TSAA	(%)	1.02	0.85	0.72	0.65
Tryptophan	(%)	0.27	0.22	0.17	1.04
Threonine	(%)	1.01	0.79	0.65	0.55
Arginine	(%)	1.70	1.31	1.15	0.93
Calcium	(%)	1.30-1.35	1.20-1.25	1.10-1.15	1.05-1.1
Av. Phosphorus	(%)	0.75	0.70	0.65	0.55
Sodium	(%)	0.16-0.18	0.15-0.18	0.15-0.18	0.15-0.18
Chloride	(%)	0.18-0.23	0.18-0.20	0.18-0.20	0.18-0.20
Salt	(%)	0.30-0.38	0.30-0.36	0.30-0.33	0.30-0.33
Essential					
Fatty Acids	(%)	1.50	1.25	1.00	1.00

1. If selection is to take place at 14 weeks and the body weight at 12 weeks is not below target, the Rearer diet can be omitted with the Grower 2 diet being fed to males until 14 weeks. Females can be introduced to a Pre-breeder diet (see Table C2) at 12 weeks.
2. Crude protein levels will vary according to the ingredients available. The levels shown are for guidance only – attempt to minimize excesses of protein wherever possible.
3. If diets with ME concentrations different to those shown are used the levels of the other nutrients must be adjusted to maintain the nutrient energy ratios above.
4. Regular sample weighings should be taken to ensure birds are growing close to target.
5. If pellet quality is poor or management factors limit growth, diets with higher nutrient: energy ratios than these should be used.

TABLE C2 Nutrient Recommendations for
For diets used in the period up to 16 weeks, see Table C1.

Diet name		Pre-Breeder	Male Holding
Males		16 weeks to end of life	17 weeks to end of life
Females		14 – 29 weeks	–
Diet Use		Conventional Pre-Breeder. Fed ad libitum to females and males. Also used when restricting growth of males by quantitative means.	For ad libitum feeding of males where a mild restriction of male body weight gain is sought. From selection to 17 weeks, use Pre-Breeder.
Nutrient			
Metabolizable Energy			
	(MJ/kg)	11.7 – 12.1	12.6 – 13.4
	(kcal/kg)	2800 – 2900	3000 – 3200
	(kcal/lb)	1272 – 1318	1364 – 1455
Crude Protein	(%)	12.5 – 13.0	9.5 – 10.1
Lysine	(%)	0.56 – 0.58	0.29 – 0.31
Methionine	(%)	0.22 – 0.23	0.13 – 0.14
M+C	(%)	0.49 – 0.51	0.29 – 0.31
Calcium	(%)	0.87 – 0.90	0.95 – 1.01
Available Phos	(%)	0.35 – 0.36	0.34 – 0.37
Sodium	(%)	0.15 – 0.16	0.15 – 0.16
Salt	(%)	0.30 – 0.31	0.30 – 0.32
Essential fatty acids	(%)	1.45 – 1.48	1.43 – 1.52

- The ME contents shown are minimum and maximum levels for each diet. The actual ME content can be between these levels.
- The nutrient contents shown are minimum levels appropriate for either the minimum or maximum ME content.
- *Under hot conditions, aim to provide up to 20 per cent of ME from fat ME, providing pellet quality can be maintained. A typical

Breeding Stock

Breeder I	Breeder II	Breeder III
—	—	—
29 weeks to end of lay		
For use in winter months when the mean 24 hour temperature is below 10°C.	For temperate summers, or spring and autumn in Mediterranean climates.	For hot summers with maximum temperatures consistently above 25°C.
11.5 – 12.6	11.7 – 12.6	* 12.1 – 12.6
2750 – 3000	2800 – 3000	2900 – 3000
1250 – 1364	1273 – 1364	1318 – 1364
14.6 – 16.0	16.9 – 18.1	19.5 – 20.2
0.68 – 0.74	0.78 – 0.84	0.90 – 0.94
0.34 – 0.37	0.38 – 0.40	0.43 – 0.45
0.58 – 0.63	0.63 – 0.67	0.72 – 0.74
2.34 – 2.55	2.68 – 2.87	3.0 – 3.2
0.44 – 0.48	0.46 – 0.49	0.49 – 0.51
0.15 – 0.16	0.15 – 0.16	0.15 – 0.16
0.30 – 0.32	0.31 – 0.33	0.33 – 0.36
1.46 – 1.60	1.69 – 1.81	1.95 – 2.02

inclusion rate for added fat would be 5 per cent.

- Crude protein levels will vary according to the ingredients used. The levels shown are for minimums for guidance only.
- The specifications above assume pellet quality will not limit feed intake. If pellet quality is poor, the nutrient : energy ratios should be increased to maintain nutrient intake.

TABLE C3 Nutrient : Energy Ratios For

The Table below shows requirement values for nutrients for growing turkeys expressed in relation to the Metabolizable Energy content of the feed (g nutrient/MJ ME).

Ages (weeks)	Nutrient				
	Lysine	Meth	TSAA	Tryp	Thr
0 to 4	1.57	0.57	1.02	0.27	1.00
4 to 8	1.34	0.53	0.94	0.23	0.86
8 to 12	1.10	0.46	0.83	0.19	0.75
12 to 16	0.89	0.40	0.71	0.15	0.58
16 to 20	0.75	0.36	0.64	0.13	0.48
20 to 24	0.65	0.32	0.57	0.11	0.42

For hens, BUT research has not indicated a need to feed the sexes differently up to 8 weeks of age. Thereafter, diets formulated to meet the recommended nutrient : energy ratios for males can be used for hens in a modified feed programme (see TABLE C4).

Growing Turkeys

These values apply for conditions where temperature, stocking density and pellet quality do not depress feed intake.

(g/MJ ME)					
Arg	Calcium	Av. P	Sodium	Salt	EFA
1.69	1.14	0.64	0.13	0.28	1.27
1.46	1.04	0.58	0.13	0.28	1.09
1.21	0.94	0.53	0.13	0.28	
1.02	0.86	0.49	0.13	0.28	
0.88	0.78	0.45	0.13	0.28	
0.80	0.74	0.41	0.13	0.28	

Suggested uses for each diet are given in TABLE C4. This shows the use of the recommended nutrient : energy ratios above to calculate the required level of inclusion of each nutrient in the diet according to the level of Metabolizable Energy.

TABLE C4 Optimum Nutrient Inclusion*Optimum nutrient inclusion levels in diets for:*

NUTRIENT					
ME MJ/kg	ME kcal/kg	ME kcal/lb	Lysine	Meth	TSAA
11.0	2629	1192	17.3	6.3	11.2
11.2	2677	1214	17.6	6.4	11.4
11.4	2725	1236	17.9	6.5	11.6
11.6	2772	1257	18.2	6.6	11.8
11.7	2796	1268	18.4	6.7	11.9
B 11.8	2820	1279	18.5	6.7	12.0
12.0	2868	1301	18.8	6.8	12.2
A 12.2	2916	1323	19.2	7.0	12.4
12.4	2964	1344	19.5	7.1	12.6
12.6	3011	1366	19.8	7.2	12.9
12.8	3059	1388	20.1	7.3	13.1

Optimum nutrient inclusion levels in diets for:

NUTRIENT					
ME MJ/kg	ME kcal/kg	ME kcal/lb	Lysine	Meth	TSAA
11.0	2629	1192	14.7	5.8	10.3
11.2	2677	1214	15.0	5.9	10.5
11.4	2725	1236	15.3	6.0	10.7
11.6	2772	1257	15.5	6.1	10.9
11.8	2820	1279	15.8	6.3	11.1
B 12.0	2868	1301	16.1	6.4	11.3
12.2	2916	1323	16.3	6.5	11.5
12.4	2964	1344	16.6	6.6	11.7
12.6	3011	1366	16.9	6.7	11.8
A 12.8	3059	1388	17.2	6.8	12.0
13.0	3107	1409	17.4	6.9	12.2

*A and B show the nutrient specifications for diets in the example feed programmes A and B respectively.

Levels in Diets for Growing Turkeys

Commercial Stock 0 to 4 weeks

(g/kg diet)							
Tryp	Thr	Arg	Calcium	Av. P	Sodium	Salt	EFA
3.0	11.0	18.6	12.5	7.0	1.4	3.1	14.0
3.0	11.2	18.9	12.8	7.2	1.5	3.1	14.2
3.1	11.4	19.3	13.0	7.3	1.5	3.2	14.5
3.1	11.6	19.6	13.2	7.4	1.5	3.2	14.7
3.2	11.7	19.8	13.3	7.5	1.5	3.3	14.9
3.2	11.8	19.9	13.5	7.6	1.5	3.3	15.0
3.2	12.0	20.3	13.7	7.7	1.6	3.4	15.2
3.3	12.2	20.6	13.9	7.8	1.6	3.4	15.5
3.3	12.4	21.0	14.1	7.9	1.6	3.5	15.7
3.4	12.6	21.3	14.4	8.1	1.6	3.5	16.0
3.5	12.8	21.6	14.6	8.2	1.7	3.6	16.3

Commercial Stock 4 to 8 weeks

(g/kg diet)							
Tryp	Thr	Arg	Calcium	Av. P	Sodium	Salt	EFA
2.5	9.5	16.1	11.4	6.4	1.4	3.1	12.0
2.6	9.6	16.4	11.6	6.5	1.5	3.1	12.2
2.6	9.8	16.6	11.9	6.6	1.5	3.2	12.4
2.7	10.0	16.9	12.1	6.7	1.5	3.2	12.6
2.7	10.1	17.2	12.3	6.8	1.5	3.3	12.9
2.8	10.3	17.5	12.5	7.0	1.6	3.4	13.1
2.8	10.5	17.8	12.7	7.1	1.6	3.4	13.3
2.9	10.7	18.1	12.9	7.2	1.6	3.5	13.5
2.9	10.8	18.4	13.1	7.3	1.6	3.5	13.7
2.9	11.0	18.7	13.3	7.4	1.7	3.6	14.0
3.0	11.2	19.0	13.5	7.5	1.7	3.6	14.2

CONTINUED

TABLE C4 CONTINUED*Optimum nutrient inclusion levels in diets for:*

NUTRIENT						
ME MJ/kg	ME kcal/kg	ME kcal/lb	Lysine	Meth	TSAA	
B	11.6	2772	1257	12.8	5.3	9.6
	11.8	2820	1279	13.0	5.4	9.8
	12.0	2868	1301	13.2	5.5	10.0
	12.2	2916	1323	13.4	5.6	10.1
	12.4	2964	1344	13.6	5.7	10.3
	12.6	3011	1366	13.9	5.8	10.5
	12.8	3059	1388	14.1	5.9	10.6
	13.0	3107	1409	14.3	6.0	10.8
	13.2	3155	1431	14.5	6.1	11.0
	A	13.4	3203	1453	14.7	6.2
13.6		3250	1474	15.0	6.3	11.3

Optimum nutrient inclusion levels in diets for:

NUTRIENT						
ME MJ/kg	ME kcal/kg	ME kcal/lb	Lysine	Meth	TSAA	
B	11.8	2820	1279	10.5	4.7	8.4
	12.0	2868	1301	10.7	4.8	8.5
	12.2	2916	1323	10.9	4.9	8.7
	12.4	2964	1344	11.0	5.0	8.8
	12.6	3011	1366	11.2	5.0	8.9
	12.8	3059	1388	11.4	5.1	9.1
	13.0	3107	1409	11.6	5.2	9.2
	13.2	3155	1431	11.7	5.3	9.4
	13.4	3203	1453	11.9	5.4	9.5
	13.6	3250	1474	12.1	5.4	9.7
A	13.8	3298	1496	12.3	5.5	9.8

*A and B show the nutrient specifications for diets in the example feed programmes A and B respectively.

Commercial Males 8 to 12 weeks
Commercial Females 8 to 11.5 weeks

(g/kg diet)						
Tryp	Thr	Arg	Calcium	Av. P	Sodium	Salt
2.2	8.7	14.0	10.9	6.1	1.5	3.2
2.2	8.9	14.3	11.1	6.3	1.5	3.3
2.3	9.0	14.5	11.3	6.4	1.6	3.4
2.3	9.2	14.8	11.5	6.5	1.6	3.4
2.4	9.3	15.0	11.7	6.6	1.6	3.5
2.4	9.5	15.2	11.8	6.7	1.6	3.5
2.4	9.6	15.5	12.0	6.8	1.7	3.6
2.5	9.8	15.7	12.2	6.9	1.7	3.6
2.5	9.9	16.0	12.4	7.0	1.7	3.7
2.5	10.1	16.2	12.6	7.1	1.7	3.8
2.6	10.2	16.5	12.8	7.2	1.8	3.8

Commercial Males 12 to 16 weeks
Commercial Females 11.5 to 15 weeks

(g/kg diet)						
Tryp	Thr	Arg	Calcium	Av. P	Sodium	Salt
1.8	6.8	12.0	10.1	5.8	1.5	3.3
1.8	7.0	12.2	10.3	5.9	1.6	3.4
1.8	7.1	12.4	10.5	6.0	1.6	3.4
1.9	7.2	12.6	10.7	6.1	1.6	3.5
1.9	7.3	12.9	10.8	6.2	1.6	3.5
1.9	7.4	13.1	11.0	6.3	1.7	3.6
2.0	7.5	13.3	11.2	6.4	1.7	3.6
2.0	7.7	13.5	11.4	6.5	1.7	3.7
2.0	7.8	13.7	11.5	6.6	1.7	3.8
2.0	7.9	13.9	11.7	6.7	1.8	3.8
2.1	8.0	14.1	11.9	6.8	1.8	3.9

CONTINUED

TABLE C4 CONTINUED

Optimum nutrient inclusion levels in diets for:

					NUTRIENT	
	ME MJ/kg	ME kcal/kg	ME kcal/lb	Lysine	Meth	TSAA
B	11.8	2820	1279	8.9	4.2	7.6
	12.0	2868	1301	9.0	4.3	7.7
	12.2	2916	1323	9.2	4.4	7.8
	12.4	2964	1344	9.3	4.5	7.9
	12.6	3011	1366	9.5	4.5	8.1
	12.8	3059	1388	9.6	4.6	8.2
	13.0	3107	1409	9.8	4.7	8.3
	13.2	3155	1431	9.9	4.8	8.4
	13.4	3203	1453	10.1	4.8	8.6
	13.6	3250	1474	10.2	4.9	8.7
	13.8	3298	1496	10.4	5.0	8.8
A	14.0	3346	1518	10.5	5.0	9.0
	14.2	3394	1539	10.7	5.1	9.1

Optimum nutrient inclusion levels in diets for:

					NUTRIENT	
	ME MJ/kg	ME kcal/kg	ME kcal/lb	Lysine	Meth	TSAA
B	11.8	2820	1279	7.7	3.8	6.7
	12.0	2868	1301	7.8	3.8	6.8
	12.2	2916	1323	7.9	3.9	7.0
	12.4	2964	1344	8.1	4.0	7.1
	12.6	3011	1366	8.2	4.0	7.2
	12.8	3059	1388	8.3	4.1	7.3
	13.0	3107	1409	8.5	4.2	7.4
	13.2	3155	1431	8.6	4.2	7.5
	13.4	3203	1453	8.7	4.3	7.6
	13.6	3250	1474	8.8	4.4	7.8
	13.8	3298	1496	9.0	4.4	7.9
A	14.0	3346	1518	9.1	4.5	8.0
	14.2	3394	1539	9.2	4.5	8.1

*A and B show the nutrient specifications for diets in the example feed programmes A and B respectively.

Commercial Males 16 to 20 weeks
Commercial Females 15 to 18 weeks

(g/kg diet)						
Tryp	Thr	Arg	Calcium	Av. P	Sodium	Salt
1.5	5.7	10.4	9.2	5.3	1.5	3.3
1.6	5.8	10.6	9.4	5.4	1.6	3.4
1.6	5.9	10.7	9.5	5.5	1.6	3.4
1.6	6.0	10.9	9.7	5.6	1.6	3.5
1.6	6.0	11.1	9.8	5.7	1.6	3.5
1.7	6.1	11.3	10.0	5.8	1.7	3.6
1.7	6.2	11.4	10.1	5.9	1.7	3.6
1.7	6.3	11.6	10.3	5.9	1.7	3.7
1.7	6.4	11.8	10.5	6.0	1.7	3.8
1.8	6.5	12.0	10.6	6.1	1.8	3.8
1.8	6.6	12.1	10.8	6.2	1.8	3.9
1.8	6.7	12.3	10.9	6.3	1.8	3.9
1.8	6.8	12.5	11.1	6.4	1.8	4.0

Commercial Males 20 to 24 weeks

(g/kg diet)						
Tryp	Thr	Arg	Calcium	Av. P	Sodium	Salt
1.3	5.0	9.4	8.7	4.8	1.5	3.3
1.3	5.0	9.6	8.9	4.9	1.6	3.4
1.3	5.1	9.8	9.0	5.0	1.6	3.4
1.4	5.2	9.9	9.2	5.1	1.6	3.5
1.4	5.3	10.1	9.3	5.2	1.6	3.5
1.4	5.4	10.2	9.5	5.2	1.7	3.6
1.4	5.5	10.4	9.6	5.3	1.7	3.6
1.5	5.5	10.6	9.8	5.4	1.7	3.7
1.5	5.6	10.7	9.9	5.5	1.7	3.8
1.5	5.7	10.9	10.1	5.6	1.8	3.8
1.5	5.8	11.0	10.2	5.7	1.8	3.9
1.5	5.9	11.2	10.4	5.7	1.8	3.9
1.6	6.0	11.4	10.5	5.8	1.8	4.0

TABLE C5 Recommended Vitamin and Mineral Supplement Specifications

NUTRIENT		AGE IN WEEKS			
		BREEDER			
		0 - 4	4 - 12	12 - 29*	29 - EOL
		GROWING			
	Units added per kg feed	0 - 4	4 - 12	12 - kill	—
Vitamin A	i.u.	15000	10000	8000	15000
Vitamin D3	i.u.	5000	3000	2000	5000
Vitamin E	mg	50	40	30	60
Vitamin K	mg	5	3	3	12
Folic Acid	mg	3	2	2	3
Nicotinic Acid	mg	75	50	40	70
Pantothenic Acid	mg	25	15	15	25
Riboflavin (B2)	mg	8	6	6	20
Thiamine (B1)	mg	5	1	1	2
Pyridoxine (B6)	mg	7	5	3	5
Biotin	µg	300	300	200	400
Choline Chloride	mg	400	150	100	450
Vitamin B12	µg	20	20	20	30
Molybdenum	mg	—	—	—	0.5
Iodine	mg	2	2	2	2
Selenium	µg	200	200	200	200
Copper	mg	20	20	20	20
Iron	mg	50	20	20	50
Manganese	mg	120	100	100	120
Zinc	mg	100	70	70	100

*For the Pre-Breeder diet from 16 weeks onwards, 80% of these levels in this third premix may be included.

The inclusion of coccidiostats, synthetic amino acids, antioxidants and growth promoters will vary according to local circumstances.



BIG 6

BRITISH UNITED TURKEYS LIMITED

Warren Hall, Broughton,
Chester CH4 0EW, England.

Tel: (0244) 661111 Telex: 61134 (BUT CH G.)

Fax: (0244) 661105